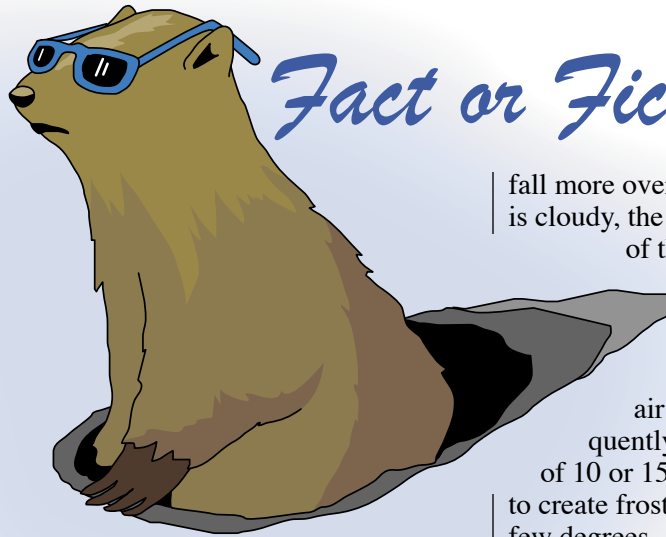


THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

Weatherlore:



Fact or Fiction?

By Daniel Brothers

Everybody has heard at least one weather proverb or saying in their life. "Red sky in the morning, sailors take warning. Red sky at night, sailor's delight." Every February the groundhog comes out and his shadow, or lack thereof, tells us how the remainder of winter will unfold. Many of these sayings actually have a touch of truth in them, and others are based solely on coincidence or legend and have no basis in fact.

The most famous myth about weather is Groundhog Day, which comes from the European tradition of Candlemas Day. If the sun came out on February 2, the halfway point of winter, then winter would continue for another six weeks. If the day is cloudy then winter would be over and the people could expect an early spring. It is summed up in an English saying:

*If Candlemas be fair and bright,
Winter has another flight.*

*If Candlemas brings clouds and
rain, Winter will not come again.*

When European settlers arrived in North America the tradition of the groundhog seeing his shadow developed. Sadly, the accuracy of the groundhog (named Punxsutawney Phil) has not been very good. Records indicate he is correct with his forecast less than half the time, possibly because he sees his shadow 87 percent of the time.

"Red sky in the morning, sailors take warning. Red sky at night, sailor's delight." As the sun sets its light travels through more of the atmosphere, particularly the lower atmosphere. More of the light is refracted by the atmosphere, so the

longer wavelength colors (such as orange and red) are more visible. Higher pressure moving in from the west brings sinking air and more particles such as dust and smoke are held closer to the ground. These particles refract the light even more, making the red colors seem even more pronounced. Generally weather systems move from west to east in the U.S. so the high pressure would be moving towards the observer. If the sky is red in the morning the high pressure is in the east, towards the rising sun, and lower pressures are moving in from the west. High pressure means sinking air and clearing skies, much to a "sailor's delight" while low pressure generally means rising air, increasing clouds, and often times precipitation.

"Rainbow in the morning gives you fair warning." Generally we see a rainbow after a storm has passed and the sun is shining from the west, through the rain that has passed, creating a rainbow. If you see a rainbow in the morning, the sun is still in the east and the rain will be in the west and likely headed your way.

"Clear Moon, Frost Soon." If you can see a clear moon it means there is a clear sky and temperatures will

fall more overnight. When the night is cloudy, the clouds hold in more of the earth's heat and it doesn't cool down as much. If there isn't much wind, which would keep the air mixing and consequently warmer, a decrease of 10 or 15 degrees is more likely to create frost than a drop of only a few degrees.

There are also countless sayings related to the behavior of animals, particularly insects and birds. Cows lie down before a storm, insects seem to swarm before a storm, and so on. It is true that animals are much more sensitive to changes in pressure, humidity, and air temperature, but most of their reactions are to current weather conditions and not to something that may be coming several hours or a day later.

Many of the sayings you hear were developed through observations made by people over time and can work. Some sayings are regional in nature and many are only valid under certain conditions. Sayings that try to predict weather more than a day ahead of time probably won't be accurate very often. Seasonal predictors such as Groundhog Day have no meteorological basis and won't work any better than flipping a coin.

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